

## 7.0 Achievements and future steps

The achievements of the Workshop can be listed as follows:

1. Developed the prototype model, *NEMURO.FISH*. This was an extremely important step because it translates our science into something tangible and economically relevant to human populations that rely on fishes for food - obtaining food from the seas on a sustainable basis;
2. Assembled an international team of marine biologists, fisheries biologists, and physical oceanographers who collectively achieved a consensus on the structure and function of a PICES Climate Change and Carrying Capacity (CCCC) prototype lower trophic level (LTL) ecosystem model for the North Pacific Ocean that included pelagic fishes, and named it "*NEMURO.FISH*";
3. Developed a computer simulation model of fish bioenergetics and growth;
4. Coupled the fish model to the NEMURO lower trophic level model;
5. Adapted the fish bioenergetics model to Pacific herring (*Clupea harengus pallasii*) in the eastern North Pacific and Pacific saury (*Cololabis saira*) in the western North Pacific;
6. Made recommendations for future modeling activities.

The significance of these achievements will ultimately be evaluated by how well the CCCC Program effectively utilizes and embraces these models as a basis of future modeling activity.

## 8.0 Acknowledgements

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## 9.0 References

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